



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

Progress in Oak Ridge Key Material Disposition

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Most of the inventory of no-path-to-disposal waste has been addressed

| Waste | Origin | Challenge | Strategy | Solution |
|--|--|--|---|--|
| Classified MLLW Oil | ETTP operations | Incineration capability for classified waste not available | Mask classified components to allow incineration at non-classified facility | Dilute oil with motor oil and ship for incineration at non-classified facility |
| Classified PCB Debris | Y-12 Operations | Treatment capability for classified PCB waste not available at the time | Utilize TSCA “Mega Rule” Bulk Product regulations | Promulgation of the TSCA “Mega Rule” allowed this waste to be disposed at NNSS without treatment |
| Classified MLLW Solids | ETTP and Y-12 Operations | Treatment capability for classified MLLW not available at the time | Persuade treatment vendors to setup secured treatment processes | Waste treated by stabilization and macroencapsulation at secure treatment facility |
| Dioxin and Furan-coded MLLW | All three ORR sites. Primarily lab and storage area cleanouts. | Treatment capability for dioxin and furan waste not available | <ul style="list-style-type: none"> 1) Performed detailed review of waste generation to ensure dioxin and furan codes were applied properly 1) Perform treatability study for dioxin and furan waste | <ul style="list-style-type: none"> 1) Found that dioxin and furan codes improperly applied to 34 containers. Removed dioxin and furan codes. Shipped waste for treatment and disposal. 2) In progress – development of solution not complete |
| Amalgamated Mercury MLLW | ETTP and Y-12 Operations | Elemental mercury did not meet LDR for PCB and certain other organics | Request variance from U.S. EPA | DOE secured treatment variance in order to dispose waste at NNSS |
| Mercury-contaminated Roofing Material MLLW | Y-12 Roofing Projects | Waste did not meet LDR for multiple UHCs and retreatment would be very costly. | Find regulatory justification for disposal of waste as-is. | Dispose of waste at EnergySolutions (Clive) under their stabilization treatment variance for high mercury waste that did not invoke UTS |
| Reactive MLLW | Primarily ORNL research | Treatment capability for mixed reactive waste not available | Persuade treatment vendors to develop reactivities treatment capability | Persuaded vendor to setup reactive waste treatment capability by leveraging the competitive bidding process |

Legacy mercury waste was dispositioned at a significant cost savings

Challenges:

- Previously treated via vacuum-assisted thermal desorption
- All 34 containers failed Universal Treatment Standards for PCBs
- \$4.7 million original estimate for retreatment
- Retreatment would result in 300 percent volume increase

Strategy:

- Requested variance from treatment standards
- Proposed macroencapsulation for 6 containers
- Proposed direct disposal of 28 containers
- Proposed disposal at offsite facility

Resolution:

- Agreed that additional treatment was not justifiable
- Agreed macroencapsulation was appropriate for the 6 containers
- Agreed direct disposal of the 28 containers was appropriate
- Did not consider cost as a justification



Partnering with Regulators resulted in an effective plan for disposition of PCB contaminated soils

Challenge:

- 4,000 cubic yards of soil generated in 1987 as part of a Remedial Action

Strategy:

- Determine through sampling that soil is not a characteristic hazardous waste
- Determine through sampling that soil does not contain F-listed solvents above the Land Disposal Restrictions limits

Resolution:

- Petitioned regulators for a “no longer contains” determination
- Determined that soil meets Waste Acceptance Criteria for onsite CERCLA landfill



Working with commercial vendors, a solution was found for the last no-path-to-disposal waste

Challenge:

- 60 containers were assigned the dioxin/furan listed waste code
- 51 containers of aqueous waste and 9 containers of solid waste
- There were no known treatment facilities permitted to receive dioxin/furan waste

Strategy:

- Research generation documents to validate wastes codes are accurate
- Oversee the onsite treatability study
- Work with commercial vendors on a final treatment solution

Resolution:

- Population reduced by 36 containers due to invalid waste codes
- Treatability study has been successful in treating dioxin/furans
- Found commercial vendors able to receive dioxin/furan waste

Partnering with Regulators allows for recycling of non-contaminated scrap metal

Challenge:

- Scrap metal generated from D&D activities
- Recycling options limited due to CERCLA Offsite Rule
- Few recyclers have CERCLA Offsite Rule Authority and are reluctant to obtain it due to increased oversight

Strategy:

- Initiative to allow recycling without need for CERCLA Offsite Rule Authority
- Metal recycling does not pose potential risk to environment like other waste forms where the CERCLA Offsite Rule was intended to reduce environmental impact

Resolution:

- Negotiated with Federal Facility Agreement parties to allow for recyclable metal to go to recyclers without CERCLA Offsite Rule Authority
- Approximately 5,200 cubic yards recycled to date



Significant progress has been made in dispositioning challenging waste streams

- The Oak Ridge Office of Environmental Management has dispositioned all but two of the legacy mixed waste streams
- Innovative solutions for legacy waste and newly-generated waste while partnering with our Regulators have resulted in identifying cost effective paths for waste disposition
- The current policy to dispose of waste as generated will prevent the accumulation of legacy waste in the future

